THE ALIGNMENT OF BUSINESS AND INFORMATION TECHNOLOGY STRATEGY IN AUSTRALIA

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ABSTRACT

The alignment of business and information technology strategy has long been recognised as a key issue for managers and has grown in importance as IT has become strategically significant. Previous studies have noted the elusiveness of alignment of business and information technology strategy and identified a number of factors that promote alignment. This study builds on previous work and categorises the factors as either people, process or organisational. A cross industry survey of Australian organisations is then used to determine the perceived benefits of alignment and the perceived importance of each factor and how successful it was in promoting alignment. The findings of the study show that Australian organisations perceive that alignment is important and can bring considerable benefits. Furthermore the study highlights the relative importance of the factors and indicates where organisations should focus their attention in order to successfully achieve alignment.

INTRODUCTION

Achieving alignment between business and information technology (IT) strategies has long been a crucial issue for many organisations. There was much interest in strategic alignment in the early 1990s as IT became seen to be an integral component of organisations (Broadbent and Weill 1993, Henderson and Venkatraman 1993. Keen (1991) notes that "IT has become an important aspect of everyday business. It is potentially a key element in competitive positioning". IT had moved from being an operational function to being a critical strategic organisationsal tool or resource that should be shaped to deliver business needs. The alignment between business and IT strategies again rose to prominence in the early 2000s with the rise of eBusiness (Choe 2003, Pollalis 2003). In a 2004 US

Society of Information Management survey, the number one concern for executives was the alignment of business and IT (Luftmann 2005).

Despite this interest, Luftman, Papp and Brier (1999) found that 42% of executives of Fortune 500 companies in the USA stated that their business and IT strategies were not aligned. Very few studies of the alignment between business and IT strategies have been conducted in Australia. The most significant Australian study was Broadbent and Weill (1993) which focused on the banking sector. Given the renewed interest in and importance of the alignment between business and IT strategies and the lack of Australian studies, we undertook a survey in 2005 that explored the alignment between business and IT strategies in Australian organisations and this paper reports the outcomes.

This paper is structured as follows. The next section reviews key research in business strategy, IT strategy and alignment between business and IT strategies and provides definitions of key concepts. A set of factors that promote alignment between business and IT strategies is discussed. The third section describes the research design and explains how the survey instrument was developed and how data was collected and analysed. The next section presents the results of the survey and discusses their implications. The final section concludes the paper and presents some suggestions for future work.

ALIGNMENT OF BUSINESS AND INFORMATION TECHNOLOGY STRATEGY

Business Strategy

There are many views on what constitutes "business strategy". Definitions for business strategy and its features include the following. A business strategy …

- should encapsulate a statement of an organisation's mission or vision so that there is a clear and consistent point of focus (King, 1978);
- provides the ability to understand competitive complexities through a systematic approach with the aim of achieving competitive advantage. Organisations need to evaluate both their internal and external environment in order to determine a position and market approach (Henderson, 1989; Rigby et al, 2002; Henderson & Venkatraman, 1993; Barney 1992A & B; Black & Boar, 1994, Porter, 1980; Porter, 1985);
- provides a deliberate plan of action (Henderson, 1989; Kaplan & Norton, 1996: Henderson & Venkatraman, 1993, King 1978);
- can be used as a tool for accelerating change by defining the directions to be followed to change the current state (Henderson, 1989);
- is partly formulated by performing environmental scanning and may be used as an analytical tool to predict future business risks and opportunities (Henderson, 1989; Kaplan & Norton, 1996; Beinhocker, 1999; Porter, 1991; Peteraf, 1993; Barney, 1993; Learned et al, 1965);
- can be used to allocate company resources as decision makers can refer to it to ensure decisions are inline with an overall company focus (Henderson, 1989; Rigby et al, 2002; Henderson & Venkatraman, 1993; Beinhocker, 1999; Porter, 1991; Porter, 1980; Porter, 1985; Peteraf, 1993; Barney, 1993);

- can be used as an internal assessment tool which identifies strengths and weaknesses as part of the internal scanning process during strategy formation (Porter, 1991; Peteraf, 1993; Barney, 1993; Black & Boar, 1994; Learned et al, 1965);
- calls for strong senior management commitment in its formulation and during implementation (Henderson, 1989; Kaplan & Norton, 1996);
- should include outcomes and key performance indicators to determine if the strategy is successful (Kaplan & Norton, 1996);
- should be adaptable to enable organisations to be nimble and guard their core competitive advantage from competitors (Kaplan & Norton, 1996, Porter, 1996:62);
- is a rich channel of information which lessens uncertainty and ambiguity through its use of the planning and analysis process (Broadbent & Weill; 1993).

We use the following definition of business strategy based on a synthesis of the definitions and key features above.

> *A business strategy is an analytical management tool used for planning a future business path. It addresses the internal and external business environment, the approach to competition, vision and allocation of company resources and which calls on strong commitment in its formulation and execution.*

IT Strategy

IT strategy is similar to business strategy although the focus is specifically on technology. From an IT management perspective the following additional components are specific to IT strategy. An IT strategy …

- addresses the management of organisational hardware and software resources and enables organisations to support planned change in future directions and resources(Broadbent & Weill, 1993; King, 1978; Henderson & Vankatraman, 1993; Gadiesh & Gilbert, 2001);
- defines how IT will be used to facilitate electronic communication to support business processes and needs (Broadbent & Weill, 1993; Henderson & Venkatraman, 1993; Clark, 1989; Gadiesh & Gilbert, 2001);
- defines the management of data including approaches for gathering, storing and presenting data (Broadbent & Weill, 1993);
- defines internal and external business relationships in order to structure liaison between the business and vendors (Henderson & Vankatraman, 1993);
- includes management of IT human resources to ensure that these are inline with the firm's IT strategy (Henderson & Vankatraman, 1993);
- acts as a strategic business tool reflecting the relationship between business strategy and IT strategy making the inference that IT strategy is indeed primarily a business tool (Simons & Davila, 1998; Kantrow, 1980; Haeckel & Nolan, 1993; Amit & Shoemaker, 1993).

We use the following definition of information technology strategy based on a synthesis of the definitions and key features above.

> *An IT strategy is a strategic business tool used to structure a future path and addresses the use and management of IT resources, business IT relationships both internal and external and the flow and storage of information throughout the organisation.*

ALIGNMENT BETWEEN BUSINESS AND IT STRATEGY

Achieving alignment between business and IT strategies is an elusive task for organisations. Luftman, Papp & Brier (1999:12) found that of the 1,051 executive responses received, representing over 500 US Fortune 1,000 organizations, 42% stated that their business and IT strategies were not aligned.

There are a number of different perspectives on alignment. Broadbent & Weill (1993) referred to alignment of business and IT strategy as "the extent to which business strategies were enabled, supported and stimulated by information strategies". King & Teo (1996: 309) defined alignment as the "coordination between the business and IS planning functions and activities". Luftman, Papp & Brier (1999) argue that "alignment focuses on activities which management perform to achieve cohesive goals across the organisation". A general theme that emerges is that alignment is synonymous with cohesive and concurrent achievement of mutual goals between business and IT.

The Strategic Alignment Model (SAM) of Henderson & Venkatraman (1990) addresses four domains: business strategy, IT strategy, organisational infrastructure and processes and information systems infrastructure and processes. Each domain contains key components, with the overall model having a total of eight key components. SAM also includes the two dimensions of strategic integration and functional integration. Luftman (1996) later extended SAM to twelve components that define alignment between business and IT. The twelve components are categorised into four broad areas addressing areas such as business scope, distinctive competencies, business governance, administrative structure, processes, skills, technological scope, systemic competencies, IT governance, IT architecture, processes and skills. Overall, the model is comprehensive in defining alignment and relates back to the above general theme of concurrent achievement of mutual goals.

King (1978) provided a different perspective and argued that IT strategy should be directly derived from business strategy and thus a hierarchy of strategies emerges. This was later found to be flawed (King & Zmud 1981, Baets 1992) by the same writer who argued that as business strategy is ever changing, the processes of business strategy formulations and IT strategy formulation need to be integrated, although the degree of integration will vary between industries.

Overall, alignment of business strategy and IT strategy has remained an important organisational issue that has plagued management for many years. We use the following definition of alignment based on a synthesis of the definitions and key features above.

> *Alignment of business and IT strategies involves the cohesive and concurrent formulation of common business and IT strategies, and the process of formulating the strategies is reciprocal in nature.*

SUCCESSFUL ALIGNMENT BETWEEN BUSINESS AND IT STRATEGY

The success of alignment between business and IT strategy may be understood from a number of different perspectives. Mintzberg (1978) argues that in order for alignment to be successful it must be realised, that is, where business strategy is evident in IT decision-making as opposed to remaining in a document. Chan et al (1997). Rockart, Earl & Ross (1996) simply state that successful alignment is understanding business opportunities through IT.

Broadbent & Weill (1993) provide a more comprehensive definition and argue that successful alignment is exhibited through the outward display of competitive advantage or successful achievement of business goals from the use of information or IT. They show that in order to achieve alignment an IS strategy needs to be consistent with business needs, be flexible and the formation process needs to be issue-oriented with a view of different organisational levels (Broadbent & Weill, 1993).

Henderson & Venkatraman (1993: 472- 473) added a financial aspect to the definition of successful strategic alignment stating that it is achieved when "economic performance is directly related to the ability of management to create a strategic fit between the position of an organisation in the competitive product-market arena and the design of an appropriate administrative structure to support its execution". They argue that strategic fit is dynamic and "not an event but a process of continuous adaptation and change".

We use the following definition of successful alignment between business and IT strategy based on a synthesis of the definitions and key features above.

> *Successful alignment between business and IT strategy is evident where both IT and business strategy can demonstrate a planned alliance which then leads to tangible, successful, business-focused outcomes.*

IMPORTANCE OF ALIGNMENT BETWEEN BUSINESS AND IT STRATEGY

IT is having an increasingly important influence on a business environment that becoming more complex and uncertain ((Amit & Schoemaker 1993, Stopford 2001). Porter and Millar (1985) argued that IT was changing the structure of industries in the economy, altering the rules and allowing organisations to create competitive advantage throughout all aspects of the value chain. Keen (1991) claimed that "IT has become an important aspect of everyday business. It is potentially a key element in competitive positioning". Keen (1991) also predicted seven key influences of IT on business including online processing, image technology, changes to business relationships and achieving location independence.

Rockart, Earl & Ross (1996) added the concept of processes reengineering as a major IT influence, noting that in 1996 "more than 50% of capital equipment invested in the United States was being devoted to information technology". In 2003 alone Australian organisations spent $20.189 billion on IT services (Gartner, 2004: 15). Clearly the importance of IT to business is increasing.

The nature of the influence and role of IT in organisations has also changed. Rockart (1988) argued that in the 1950s information systems were used mainly for accounting purposes and batch processing. These later evolved to database-centred online systems supporting organisational processes and finally to IT being the communication norm. IT has moved from simply supporting operational functions to being a critical strategic organisational resource which should be shaped to deliver business needs (Henderson & Venkatraman, 1993; Rockart, 1988; Carr, 2003). Businesses are highly dependant on IT (Broadbent & Weill (1993). The business entrepreneur Vinod Khosla, cofounder of Sun Microsystems and IT venture capitalist, stated "business is being completely reinvented" with the use of IT (Champion & Carr, 2000).

The influence of IT has also been noted in the business board room. Rockart (1998) stated that IT can have a profound effect on business strategy. Keen (1991:2) predicted that by 1993 it would be difficult for any Fortune 1000 company "to define an effective business strategy that does not rely significantly on information technology". Overall, IT has become a major organisational resource

for executing business strategy (Rockart, Earl & Ross, 1996; Feeny & Willcocks, 1998; Rangan & Adner, 2001).

Given the important role that IT plays in business strategy it is then vital that the two are in alignment. Henderson & Venkatraman (1993) argue that no IT system on its own will deliver competitive advantage, the advantage comes from being able to exploit that functionality to achieve business goals. They further add that the inability to achieve these goals is due to lack of alignment between business strategy and IT strategy.

Clearly, business leaders should be seeking ways to achieve successful alignment between IT and business strategies. The alignment of business and IT strategy has consistently been found to be a major concern for business executives (Chan et al 1997, Luftmann 2005).

FACTORS THAT PROMOTE ALIGNMENT BETWEEN BUSINESS AND IT STRATEGY

A useful means of understanding how organisations can achieve successful alignment between business and IT Strategy is to identify factors that promote alignment. Using a comprehensive analysis of relevant literature, ten factors that promote the alignment between business and IT strategies have been identified (Broadbent and Weill 1993, Burns and Szeto 2000, Rockart, Earl and Ross 1996, Henderson and Venkatraman 1993, Choe 2003, Pollalis 2003, Earl and Feeny 1994, Kaplan and Norton 1996, Luftmann, Papp and Brier 1999). The ten factors are:

Firm wide active involvement;
Long term focus;
Meeting of the minds;
Clarity and consistency;
Management skill and capability;
Alignment facilitating processes;
Organisational structure;
Organisational culture;
Communication;
IT as an organisational tool.

Each of these factors is discussed below.

Firm-wide active involvement

A two way relationship between the business and IT functions is required during strategy formulation to achieve strategic alignment. This requires extensive firm-wide participation, information flow and interaction between business and IT staff (Henderson & Venkatraman 1993; Kantrow 1980, Choe 2003; Luftman, Papp & Brier 1999). In particular the Chief Information Officer (CIO) should be actively involved in all strategy formulation within the organisation (Rockart, Earl & Ross 1996; Ross et al 1996; Keen 1991). In a study of sixty organisations Earl & Feeny (1994) found that a crucial part of a CIO's role is to assure that the organisation's IT function is deployed to achieve strategic advantage. IT staff should feel like they are part of the organisation and not just the IT industry (Broadbent & Weill 1993). If this is not the case then some critical decisions may be left to the IT department alone (Haeckel & Nolan 1993).

Long term focus

Both IT and business strategies should hold a long-term focus on critical issues for successful alignment (Broadbent & Weill, 1993; Kaplan & Norton, 1996). When either IT or business strategy lacks a long-term focus alignment is impeded. In particular, senior management attention is required when formulating IT strategy to ensure a long-term focus (Broadbent & Weill 1993; Rockart 1988).

Meeting of the minds

Management must reach consensus about firm-wide strategic issues between the business and IT functions for successful alignment (Broadbent & Weill, 1993; Rockart, Earl & Ross, 1996; Kaplan & Norton, 1996). If this "meeting of the minds" occurs then a clear understanding of key strategies spreads throughout the organisation (Simons & Davila 1998). Consensus is best achieved when both the Chief Executive Officer (CEO) and the CIO share a clear vision and focus and communicate in a common language (Slywotzky & Morrison 2000).

Clarity and consistency

Both the business and IT strategies need to be clear and consistent with business goals of the organisation for successful alignment (Broadbent & Weill 1993; Henderson & Venkatraman 1993; Chan et al 1997; Willcocks & Plant 2001; Choe 2003; Pollalis 2003; Kaplan & Norton (1996).

Management skill and capability

Management skill and capability needs to be well developed in both IT and business managers to facilitate alignment (Broadbent & Weill 1993; Rockart, Earl & Ross 1996; Choe 2003; Luftman, Papp & Brier 1999; Kaplan & Norton 1996). Kantrow (1980) added that the skill of understanding technology is not just needed at upper management but is central to business thinking at all levels. The need for IT managers to understand business needs is particularly important (Kaplan & Norton 1996).

Alignment facilitation processes

Strategically-oriented decision-making processes that are maintained and managed by key stakeholders are important for successful alignment (Broadbent & Weill 1993; Luftman, Papp & Brier 1999; Kaplan & Norton 1996).

Organisational structure

Having an organisational structure that provides mechanisms for accountability and ownership of strategy formulation is important for successful alignment (Broadbent & Weill, 1993; Henderson & Venkatraman, 1993; Luftman, Papp & Brier, 1999). Having such mechanisms in place not only ensures that IT and business strategy will be formulated but also holds individuals accountable when alignment is not achieved and business goals remain unfulfilled. In their study of strategy formulation in four Australian banks, Broadbent & Weill (1993) found that a rapid change in organisational structure from centralised to decentralised caused IT systems to be incompatible, leading to a focus on operational issues rather than on formulating and maintaining IT strategy. Pollalis (2003) noted that those organisations with smaller IT units were more flexible and therefore more readily able to the align business and IT strategy more successfully than those who had larger IT units.

Organisational culture

A supportive organisational culture is required to establish a strong working relationship between the business and IT functions and achieve successful alignment (Kantrow 1980). Senior management support is important is the establishment of a supportive organisational culture (Luftman, Papp & Brier, 1999).

Communication

Purposeful and strategically focused communication is important for successful alignment (Broadbent & Weill (1993); Broadbent & Weill 1997; Choe 2003; King & Teo 1996; Kaplan & Norton 1996). Communication facilitates understanding and promotes mutually beneficial thinking about strategy (Rockart, Earl & Ross, 1996 ;Pollalis 2003). When communication is rewarded and recognised it became an organisational norm (Kaplan & Norton 1996). Keen (1991: 214) noted that in order for communication to be effective organisations need "to replace old monologues by dialogue" and that much misalignment is due to poor communication. He further adds that the dialogue needs to start with top management with the view that IT is a business resource that is used to achieve business needs.

IT as an organisational tool

IT needs to be perceived by organisations as a resource or business asset (Willcocks & Plant 2001; Haeckel & Nolan 1993; Keen 1991; Luftman, Papp & Brier 1999). This perception needs to be deeply instilled within organisations to ensure that new IT opportunities that emerge are recognised and can impact business strategy formulation (Henderson & Venkatraman 1993).

The ten factors vary across the individual, group and organisational levels, indicating that successful alignment is complex and requires transformation of both individuals and organisations.

RESEARCH DESIGN

The purpose of the research is to explore the alignment of business and IT strategies in Australian organisations and identify ways that organisations can achieve successful alignment. We use factors as a way of defining how organisations can achieve successful alignment between business and IT Strategy. Factors are easily understood and communicated and well suited to this purpose.

The research design comprised three phases. The first phase involved an analysis of literature to synthesise a set of factors that promote alignment between business and IT strategy. The second phase involved a series of expert interviews in order to confirm and refine the factors and ensure they could be readily understood by practitioners. The third phase involved a survey of Australian organisations to identify the importance and degree of success of each factor in achieving successful alignment.

The first phase is reported in the previous section of the paper and resulted in the identification of ten factors that promote alignment between business and IT strategy. In the second phase six expert interviews were conducted with practitioners who had extensive consulting experience with business and IT strategy. The interviews were semi-structured and comprised a number of questions based on the ten factors described earlier in the paper. Interviewees were asked to comment on the definition and importance of each of the factors and how they related to each other. They were also

asked to nominate any further factors. As a result of the expert interviews, two changes were made to the list of factors:

1. The factors were grouped into three clusters – people, process and organisation – for presentation in the survey questionnaire;
2. Several of the factors – management skill and capability, firm-wide active involvement, alignment facilitation processes and long term focus were split into two sub-factors, one relating to business and the other IT. The other factors remained as single factors.

Thus a total of fourteen factors grouped into three clusters were used as the basis of survey questionnaire design.

In the third phase the survey questionnaire was designed, piloted, administered and the results analysed. The survey comprised five sections together with a covering letter that explained the purpose of the research study and offered a copy of the results and their interpretation to those who responded. The first section of the survey asked for background information including size, structure, revenue, geographical segmentation or operations and client base, industry sector and overall perceptions of business and IT strategy. The second and third sections concerned aspects of business and IT strategy respectively and explore the perceived benefits of alignment. The fourth section asked respondents to use of 5-point likert scale to indicate their perceptions of both the importance and success in their organisation of factors that promote alignment between business and IT strategy. The original survey included a fifth part that concerned factors that inhibited alignment between business and IT strategy. Due to space limitations this study focused on analysing and reporting the other parts of the survey. A copy of the survey may be found in the Appendix

The survey questionnaire was piloted by nine experienced business and IT strategy consultants and several changes were made to the wording of the questionnaire to clarify meaning. The population of the survey was CIOs and CEOs from large and medium sized Australian organisations. It is very important that these senior people complete the survey questionnaire, as we need to capture their perceptions regarding organisational performance. The sample was obtained by purchasing a mailing list of the CIOs and CEOs of the top 500 Australian organisations. This gave a population sample of 1000 for the survey. However after filtering of organisations that were based in New Zealand the population sample was reduced to 944. The survey was distributed by mail with an explanation letter and a reply paid envelop included. A total of 69 usable responses were received indicating a response rate of 7%. While this is relatively low, it is reasonable given errors found in the mailing list and the senior level of the respondents.

RESULTS AND DISCUSSION

The results of the survey are presented according to the main sections of the survey questionnaire: organisation background information, business strategy, information technology strategy, and factors that promote alignment between business and IT strategy.

Organisation Background Information

The first section of the questionnaire concerned general information about the organisations and their broad perceptions of alignment between business and IT strategy. Of the 69 respondents, 25% indicated they were CEOs and 51% indicated they were CIOs: the remaining 24% did not provide the information. Respondents were from a variety of industry sectors with 19% from manufacturing,

17% from finance and insurance, and the remainder between 5% and 10% including agriculture, forestry and fishing, mining, wholesale trade, retail trade, transport and storage, property and business services and government administration. The organisations were either private, publicly listed or government in approximately equal proportions. Just over half of the respondents indicated that all their operations within Australia (54%) while almost all respondents (90%) indicated that 75% or more of their operations were within Australia. Similarly, 80% of respondents indicated that 75% or more of their client base was within Australia. All respondents agreed that IT was important or very important to their organisation's operations.

Some interesting patterns emerge from the percentage of total capital expenditure that is spent on IT per annum. 15% of respondents indicated that that they spend in excess of 50% of their annual capital expenditure on IT and all of these respondents had annual revenue of $500m or more. 80% of privately owned organisations and 62% of publicly owned organisations indicated that they spend less than 20% of their annual capital expenditure on IT. In comparison, 38% of publicly owned organisations and only 8% of private organisations indicated that they spend more than 50% of their annual capital expenditure on IT. Overall, this indicates that public organisations are more likely to spend large amounts of their capital budget on IT than private organizations (assuming that capital budget is defined consistently by both public and private organizations).

Almost all respondents were involved or very involved with business strategy and IT strategy formulation within their organisations. Also, almost all respondents agreed that achieving alignment between business and IT strategy within their organisations was very important.

Finally respondents were asked about what alignment of business and IT strategy brings to their organisations. The three highest rated benefits were improved communication between business and IT decision makers, improved relationships between business and IT decision makers, and improved use of IT to achieve organisational goals. The three lowest rated benefits were achieving a reduction in IT costs, improving revenue and achieving a better perceived use of IT.

Further analysis revealed differences in perceptions of CIOs and CEOs. CEOs believed more strongly than CIOs that alignment could improve revenue (59% vs. 46%), reduce IT costs (71% vs. 60%) and increase competitive advantage in the marketplace (88% vs. 69%). CIOs focus more on the intangible benefits that alignment brings. Different perceptions between large (annual revenue greater than $500m) and smaller organisations were also revealed. Large organisations believed more strongly than smaller organisations that alignment would bring improved revenue but less supportive of the impact alignment would have on organisational brand and competitive advantage in the marketplace.

BUSINESS STRATEGY AND INFORMATION TECHNOLOGY STRATEGY

The second section of the questionnaire concerned more focused perceptions of alignment between business and IT strategy. A significant majority of respondents (87%) either agreed or strongly agreed that their organisation has a well formulated business strategy and most business strategies were organisation-wide (80%). 74% of respondents either agreed or strongly agreed that their organisation has a well formulated IT strategy and most IT strategies were organisation-wide (78%). Thus business strategies are generally perceived to be better formulated than IT strategies.

Most (67%) of respondents either agreed or strongly agreed that their business strategy encapsulated their IT strategy. CIOs were more likely than CEOs to believe that their organisation's business strategy encapsulated their IT strategy (74% vs. 63%) and more likely to think the two strategies are

aligned (86% vs. 71%). A minority (22%) of respondents perceive their business and IT strategies to not be aligned. A recent US study of Fortune 500 companies found that 42% of executives thought that their business and IT strategies were not aligned (Luftman, Papp & Brier, 1999), suggesting that Australian organisations may be more successful in achieving alignment than US organizations (however it is difficult to compare results of the two studies as they used different survey questionnaires and the respondents may have had different profiles).

Factors That Promote Alignment

The fourth section of the questionnaire concerned perceptions of factors that promote alignment between business and IT strategy. The factors were grouped into three clusters – people, process and organisation and are reported accordingly. Respondents were asked to indicate how important they consider each factor to be in achieving alignment and how successful their organisation had been in performing against each factor on 5-point likert scales.

Results are reported for importance and success separately and then cross tabulations are used to examine the interaction of importance and success. For the cross tabulations a two-by-two matrix is used. The vertical axis displays the importance response as either important (likert scale score of 4 or 5 - agree or strongly agree) or not important (likert scale score of 3 or less – neutral, disagree or strongly disagree). The horizontal axis displays the success response as either successful (likert scale score of 4 or 5 - agree or strongly agree) or not successful (likert scale score of 3 or less – neutral, disagree or strongly disagree). In the first cross tabulation the number in each cell is the sum of likert scale responses. In the second cross tabulation a list of individual factors is provided in each cell, based on the average of likert scale responses. Further analysis of responses is undertaken for each cross tabulation using the CEO/CIO, public/private, and Large/SME groupings.

People Factors

The questionnaire asked respondents to rate the importance and their organisation's success for the following people factors:

Meeting of the minds between business and IT decision makers;
Management skill and capability of business decision makers;
Management skill and capability of IT decision makers;
Communication between business and IT decision makers;
Firm wide active involvement in business and IT strategy formation;
Involvement of business decision makers in IT strategy formation;
Involvement of IT decision makers in business strategy formation.

With respect to importance, all 7 of the people factors had average likert scale ratings between 4 and 5 (agree and strongly agree) indicating strong agreement that people factors are important in achieving alignment. The top three people factors in importance are communication between business and IT decision makers, management skill and capability of business decision makers and achieving a meeting of the minds between business and IT decision makers.

With respect to success, all 7 of the people factors had average likert scale ratings between 3 and 4 (neutral and agree) indicating agreement about successfully performing people alignment factors. The three people factors most successfully performed are management skill and capability of business decision makers, management skill and capability of IT decision makers and effective communication between business and IT decision makers.

Figure 1 displays the first cross tabulation for people factors. The majority of respondents (283 - 62%) perceived people factors to be important and indicated that their organisation was successful at performing them. Some respondents (132 - 29%) perceived people factors to be important but

felt that their organisations were unsuccessful at performing them. The remaining respondents (44 – approx.10%) perceived people factors to be not important.

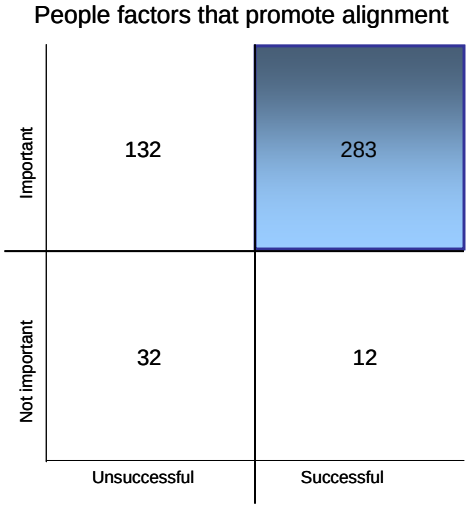

Figure 1 People factors cross tabulation

Further analysis revealed that CEOs generally perceived people factors to be both more important and that their organisations were more successful with people factors than CIOs. This indicates that CEOs place more emphasis on people factors than the CIOs. There is little difference in the perceptions of large organisations and SMEs about people factors. Both public and private organisations consider people factors to be equally important but public organisations perceived that they were more successful with people factors than private organisations, suggesting that private organisations find people factors more challenging.

Figure 2 displays the second cross tabulation for people factors and indicates that all of the people factors are perceived as important and successfully performed except for firm wide active involvement in business and IT strategy formation, which is seen as important but not successfully performed.

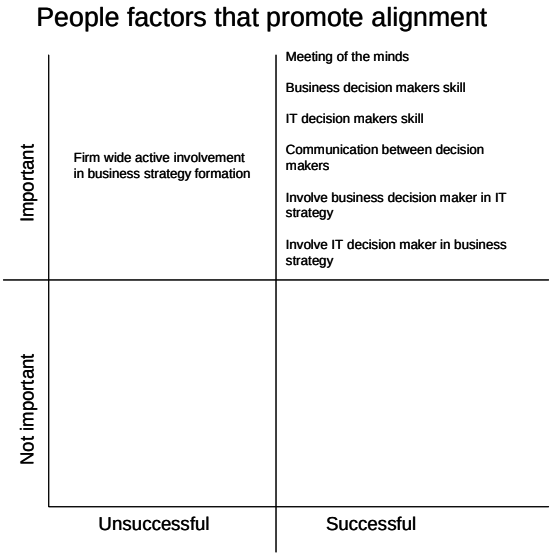

Figure 2 People factor individual cross tabulation

The top three factors scoring 70% or above on the cross tabulation analyses are:

The management skill and capability of the business decision maker;
The management skill and capability of the IT decision maker and;
Communication between the business and IT decision maker.

These findings are not entirely consistent with previous studies, which found that firm wide active involvement in strategy formation, management skill and capability, communication and a meeting of the minds were the most important factors in promoting alignment. This study suggests that the management skill and capability of the IT decision maker is also perceived to be very important.

The cross tabulation revealed that many respondents believed that firm wide active involvement in business and IT strategy formation was not important in promoting alignment Firm wide active involvement in strategy formation is predominately a feature of US studies and is a less important factor for Australian organisations. Further analysis revealed that while CIOs generally agreed with this observation, CEOs generally disagreed indicating that while CEOs believe that organisational buy-in is important in strategy formation, CIOs believe it is more of an individual task.

Surprisingly 15% of all respondents believed that it was not important to involve the IT decision maker during the business strategy formation process, with CIOs providing stronger support than CEOs. Furthermore, 12% of all respondents believed that involving the business decision maker in IT strategy formation was also unimportant, with CEOs providing stronger support than CIOs. Earl and Feeny (1994) found that it was crucial that the CEO be involved in IT strategy formation in order to ensure strategy business goals are deployed through the organisations use of IT. It is surprising that some Australian managers perceive that business and IT decision makers need only be involved in their own strategy formation process.

Further analysis revealed that CIOs perceived that obtaining involvement from business decision makers in IT strategy formation was the least successfully performed people factor. Correspondingly CEOs perceived that obtaining IT decision maker involvement during business strategy formation was the least successfully performed people factor. This suggests that both CEOs and CIOs have more work to do in developing trusting relationships within strategy formation.

Process Factors

The questionnaire asked respondents to rate the importance and their organisation's success for the following process factors:

A process which promotes clarity and consistency;
A process that ensures IT strategy goals are linked with business goals;
A process that ensures business strategy goals are linked with IT goals;
The availability of a formal process which facilitates alignment;
Formal communication processes in place between business and IT decision makers;
A formal process that ensures business strategy has a long term (5 year +) focus;
A formal process that ensures IT strategy has a long term (5 year +) focus.

With respect to importance, only 3 process factors had average likert scale ratings between 4 and 5 (agree and strongly agree), while the other 4 process factors averaged just under 4. This indicates strong agreement that process factors are important in achieving alignment, although not as important as people factors. The top three process factors in importance are having a process that ensures IT strategy goals are linked with business goals, having a process which promotes clarity and consistency and having a formal communication process in place between business and IT decision makers.

With respect to success, all 7 of the process factors had average likert scale ratings between 3 and 4 (neutral and agree) indicating agreement about successful performance with process alignment factors. The three process factors most successfully performed are the same as for importance above.

Figure 3 displays the first cross tabulation for process factors. Many respondents (214 - 46%) perceived process factors to be important and indicated that their organisation was successful at performing them. Some respondents (150 - 32%) perceived process factors to be important but felt that their organisations were unsuccessful at performing them. The remaining respondents (105 - 22%) perceived process factors to be not important.

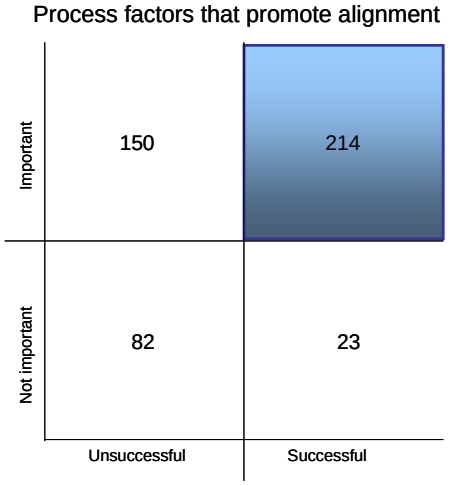

Figure 3 Process factors cross tabulation

Further analysis revealed that both CEO and CIO perceptions were generally consistent with the overall cross tabulation data, however CEOs were slightly more confident (10%) in indicating that their organisation was successful at performing in this category.

Figure 4 displays the second cross tabulation for process factors and indicates that all of the process factors are perceived as important but only three are seen to be successfully achieved.

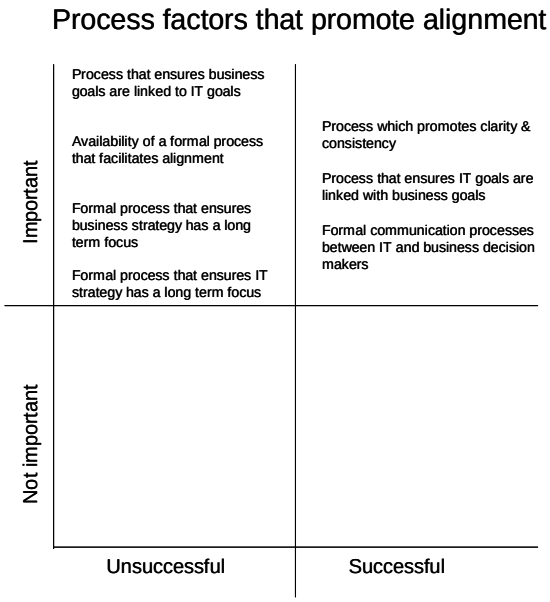

Figure 4 Process factor individual cross tabulation

The top two factors scoring 50% or above on the cross tabulation analyses are:

a process that promotes clarity and consistency;
a process that ensures IT goals are linked with business goals.

These findings are not entirely consistent with previous studies, which found that a long term focus, clarity and consistency and an alignment facilitating process were key factors. While this study confirmed that clarity and consistency were important, it also found the additional factor of having a process that ensures IT goals are linked with business goals was very important in Australian organisations. Surprisingly, linking business goals to IT goals was found to be the least important process factor. This suggest an asymmetrical relationship in which IT strategy should be driven by business strategy, a view supported by King (1978) but later rejected by King & Zmud (1981) and Baets (1992) who argue that relationships in business are very dynamic rather than hierarchical. This study however finds that in Australian organisations a hierarchical relationship between business and IT strategy is evident and furthermore, is seen to be important in promoting alignment.

A third of overall respondents believed that having a long term IT strategy is not important and just under a third believe that a long term business strategy is not important. CIOs were more likely to agree with this finding than CEOs (13%), suggesting that the IT environment is changing too rapidly to allow for realistic long term strategy formation. Larger organisations were more likely than SMEs to find a long term business strategy unimportant (21%), and also more likely than SMEs to find a long term IT strategy as unimportant in achieving alignment (14%), indicating that SMEs place more emphasis on long term strategy formation.

A third of overall respondents believed that having a formal process that facilitates alignment is not important. Publicly owned organisations were more likely than privately owned organisations to agree. Large organisations also agreed with the statement; however SMEs generally didn't agree and found all of the factors important in achieving alignment.

Over a third of respondents found that having a process that facilitates alignment was performed unsuccessfully. Furthermore over a third of respondents found that implementing a process that promotes clarity and consistency and having a formal communication process between the business and IT decision makers was also difficult to perform successfully. These responses are surprisingly high given that these factors are considered so important in the literature.

Organisational Factors

The questionnaire asked respondents to rate the importance and their organisation's success for the following organisational factors:

An organisational structure which facilitates alignment of business and IT decision makers;
An organisational culture which facilitates alignment between business and IT decision makers;
The view that IT is an innovative organisational tool as opposed to a cost centre.

With respect to importance, all 3 of the organisational factors had average likert scale ratings between 4 and 5 (agree and strongly agree) indicating strong agreement that organisational factors are important in achieving alignment. The top organisational factor in importance is having an organisational culture which facilitates alignment between business and IT decision makers.

With respect to success, all 3 of the organisational factors had average likert scale ratings between 3 and 4 (neutral and agree) indicating agreement about successful performance with organisational alignment factors. The organisational factor most successfully performed is having an organisational structure which facilitates alignment of business and IT decision makers.

Figure 5 displays the first cross tabulation for organisational factors. Many respondents (100 - 50%) perceived organisational factors to be important and indicated that their organisation was successful at performing them. Some respondents (65 - 33%) perceived organisational factors to be important but felt that their organisations were unsuccessful at performing them. The remaining respondents (35 - 18%) perceived people factors to be not important.

Further analysis revealed that the perceptions of CIOs were generally consistent with the overall cross tabulation data. CEOs however were more likely to perceive that organisational factors were important but difficult to perform successfully (21%) indicating that CEOs are more optimistic about successfully performing organisational factors.

Figure 6 displays the second cross tabulation for organisational factors and indicates that all of the organisational factors are perceived as important and successfully performed except for the view that IT is an innovative organisational tool as opposed to a cost centre, which is seen as important but not successfully performed.

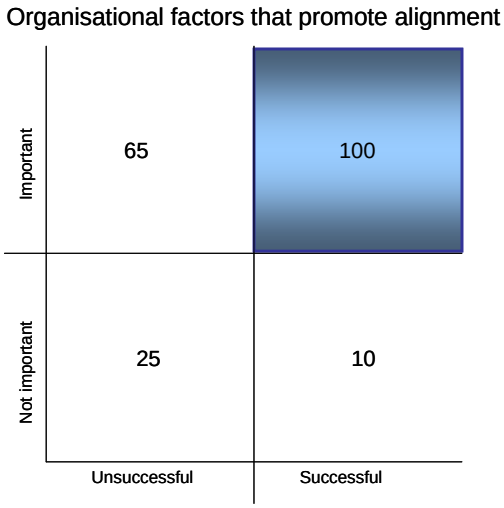

Figure 5 Organisational factors cross tabulation

Figure 6 Organisational factor individual cross tabulation

The top two factors scoring 50% or above on the cross tabulation analyses are:

> An organisational structure which facilitates alignment of business and IT decision makers;
> An organisational culture which facilitates alignment between business and IT decision makers.

These findings are consistent with previous studies, which found that creating an organisational structure that facilitates alignment is important as it provides a "mechanism for accountability and ownership" if alignment goals remain unfulfilled (Broadbent & Weill 1993). Henderson & Venkatraman (1993), in their US based study, found that the IT function needs to be viewed as an organisational tool in order to promote alignment and when it is not viewed this way it is usually

due to deeply instilled perceptions which hamper "the extent to which new IT opportunities emerge and are addressed by the organisation". This study confirms this outcome for Australian organisations.

Further analysis revealed that CEOs were 33% more likely than CIOs to indicate that having an organisational culture that promotes alignment is both important and successfully performed. This may lead to problems with achieving alignment as Porter (1996) notes that the greatest threat to strategy can come from within the organisation. Furthermore public organisations were more likely than privately owned organisations to indicate that having an organisational culture that promotes alignment is both important and successfully performed (17%). Similarly SMEs were slightly more likely than large organisations to indicate that an organisational culture that facilitates alignment is both important and successfully performed (11%).

Surprisingly 17% of all respondents indicated that the organisational factors were not important in achieving alignment. CEOs were more likely than CIOs to perceive that organisational culture was not an important element in achieving alignment. Large organisations (19%) were more likely than SMEs (11%) to perceive that organisational culture was not an important element in achieving alignment.

A third of all respondents indicated that although an organisational culture facilitating alignment and an attitude that IT is an organisational tool are important, they are difficult to perform successfully (37%). CIOs were more likely than CEOs to perceive that treating IT as an organisational tool was the least successfully performed factor (17%). They were also more likely to indicate that an organisational culture facilitating alignment was unsuccessful than the CEOs and more likely than the CEOs to indicate that an alignment friendly organisational structure was a challenge. Overall, this suggests that the CIO group were less optimistic than the CEO group with successful performance of organisational factors.

SMEs were more likely than large organisations to find it difficult to change the perception that IT is an organisational tool rather than a cost centre (26%). Furthermore public organisations were slightly more likely than privately owned organisations to find it difficult to succeed with an organisational culture that facilitated alignment (14%). Privately owned organisations on the other hand were more likely to find successfully performing an alignment friendly organisational structure difficult (20%). Both public and privately owned organisations struggled with changing the perception of IT as an organisational tool rather than a cost centre.

High Level Factor Comparisons

Overall respondents perceived that people factors were the most important and the most successfully performed, followed by organisational factors and process factors. Organisational factors were found to be highly important but the most difficult to successfully perform. Process factors were given the lowest importance rating.

The large/SME, public/private respondent segments were consistent with these overall trends. Both CIOs and CEOs were consistent with the overall trend for allocating importance. However CEOs perceived that process and then people factors were more difficult to successfully perform than organisational factors.

CONCLUSION

A number of important conclusions about the alignment of IT and business strategy may be drawn from this study. Respondents perceive that alignment brings both tangible and intangible benefits. When compared with previous research involving mainly US base organisations, it is apparent that Australian organisations are perceived to be more successful than US companies in achieving alignment. Respondents perceived that people factors were the most important and the most successfully performed, followed by organisational and process factors. Organisational factors were deemed the hardest to successfully perform.

People factors were generally found to be both important and successfully performed. Of the people factors, the business decision maker's skill and capability are the most important factors in achieving successful alignment. CIOs want to be more involved in business strategy formation however CEOs do not always believe that to be necessary. CIOs would also like to see more CEO involvement in IT strategy formation but the CEO group believes that may not be necessary. A surprising proportion of CEOs perceive that business and IT decision makers need only be involved in their own strategy formation process. Furthermore, the study found that business decision makers may not always be comfortable being involved in a strategy formation process outside of their own area.

Process factors were found to be both important and successfully performed by a third of respondents. The most important process factors were having a process that promotes clarity and consistency and a process that ensures IT goals are linked with business goals. Furthermore a hierarchical relationship was found suggesting that IT strategy tend to be driven by business strategy in Australian organisations. Surprisingly a third of all respondents believed that having a long term IT strategy is not important and just under a third believe that a long term business strategy is not important. Another surprising outcome was that a third of all respondents indicated that implementing a process that promotes clarity and consistency and having a formal communication process between the business and IT decision makers was challenging. Publicly owned organisations found that achieving clarity and consistency was particularly difficult to successfully perform and almost half the SMEs perceived that developing a long term IT strategy was the least successfully performed factor. CIOs perceived that ensuring business goals are linked to IT goals was difficult to successfully perform. This is consistent with the earlier finding that IT strategy tends to be driven by business strategy.

Organisational factors were found to be important and successfully performed by a third of respondents. Organisational structure and culture are seen to be most important factors in facilitating alignment. A third of all respondents indicated that an alignment promoting organisational culture and an attitude that IT is an organisational tool are difficult to successfully perform. CIOs perceive that generating an organisational culture that promotes alignment and treating IT as an organisational tool can be difficult to successfully perform.

Further research can be undertaken in two areas:

- the survey could be administered annually to determine trends over time in perceptions of the importance and success with alignment factors;
- in-depth case studies could be conducted to better understand how and why perceptions of respondents were formed and to strengthen generalisation of the findings.

In summary, Australian organisations are heavily reliant on IT and achieving alignment between business and IT strategy translates into realising tangible and intangible benefits both internally and in the market place. Alignment between business and IT strategy allows organisations to exploit IT functionality to achieve business goals. Inability to achieve these goals is partly due to a lack of alignment. The findings of this study will help Australian organisations to understand how to best achieve successful alignment and reap the benefits that alignment can bring.

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APPENDIX 1 - ALIGNMENT OF BUSINESS AND INFORMATION TECHNOLOGY STRATEGY QUESTIONNAIRE

Alignment of business & information technology strategy - A cross industry Australian study

Part 1: Background

This series of questions aims to collect background information which will be used in the formation of industry clusters and subsequent data analysis.

1. In which industry sector is your organisation?

Agricultural, forestry and fishing	Communication services
Mining	Finance & Insurance
Manufacturing	Property & business services
Electricity, gas & water supply	Government administration and defence
Construction	Education
Wholesale trade	Health & community services
Retail trade	Cultural & recreational services
Accommodation, cafes & restaurants	Personal services
Transport & storage	Professional services
Other	

2. What is your organisation's annual revenue?

_____

3. What is your organisation's ownership structure?

Private
Publicly listed
Government

4. How are your organisation's operations geographically segmented?

100% of operations in Australia
Between 76% and 99% of operations in Australia and the remainder overseas
Between 51% and 75% of operations in Australia and the remainder overseas
Between 26% and 50% of operations in Australia and the remainder overseas
Less than 25% operations within Australia

5. What is the geographic segmentation of your organisation's client base?

100% of client base is in Australia
Between 76% and 99% of client base is in Australia and the remainder overseas

Between 51% and 75% of client base is in Australia and the remainder overseas
Between 26% and 50% of client base is in Australia and the remainder overseas
Less than 25% of client base is in Australia

6. How important is IT to your organisation's operations?

Not important at all	Not important	Neutral	Important	Very important

7. What percentage of your organisation's total capital expenditure is spent on IT per annum?

Between 0-10%	Between 11-20%	Between21-30%	Between 31-40%	Between 41-50%	Over 50%

8. What is your current title within the organisation? (please specify)

_____

9. Please answer the following two statements

a) To what extent are you involved in business strategy formation within your organisation?

Very uninvolved	Uninvolved	Neutral	Involved	Very involved

b) To what extent are you involved in information technology strategy formation within your organisation?

Very uninvolved	Uninvolved	Neutral	Involved	Very involved

10. How important do you think it is to achieve alignment between business and information technology strategy within your organisation?

Not important at all	Not important	Neutral	Important	Very important

11. Do you think alignment between business and information technology strategy achieves the following within your organisation?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Improved relationship between business and IT decision makers					
Improved communications between business and IT decision makers					
Improved perception of the IT function within the organisation					
Improved use of IT within the organisation					
Improved utilisation of IT resources to achieve organisational goals					
Improved revenue					
Reduction in IT costs					
Reduction in overall costs					
Better IT returns on investment					
Better overall returns on investment					
Perceived improved use of IT innovation by the marketplace					
Positive effect on organisational brand					

Increased competitive advantage in the marketplace					

Part 2: Business Strategy

Business strategy in this questionnaire is defined as the strategy adopted for the entire organisation.

12. My organisation has a well formulated business strategy.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

13. The highest level of business strategy within my organisation is:

Organisation based
Business unit based
Divisionally based
Project based

Part 3: Information Technology Strategy

For the purpose of this questionnaire Information technology strategy refers to the strategy adopted by the entire organisation in planning its use of information technology resources.

14. My organisation has a well formulated information technology strategy.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

15. My organisation's business strategy encapsulates the information technology strategy.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

16. The highest level of information technology strategy within my organisation is:

Organisation based
Business unit based
Divisionally based
Project based

Part 4: Factors that promote the alignment between business and information technology strategy

Previous studies have identified that there are several factors which promote alignment between business and information technology strategy. Studies have noted that when these factors are present there is a greater chance of successful alignment.

17. How well aligned is the business and information technology strategy within your organisation?

Not well at all	Not well	Neutral	Well	Extremely well

18. How important are the following *people* factors in achieving the alignment between business strategy & information technology strategy within your organisation?

	Very Unimportant	Unimportant	Neutral	Important	Very Important
Meeting of the minds between business and IT decision makers					
Management skill & capability of business decision makers					
Management skill & capability of IT decision makers					
Communication between business and IT decision makers					
Firm wide active involvement in business and IT strategy formulation					
Involvement of business decision makers in IT strategy formulation					
Involvement of IT decision makers in business strategy formulation					
Meeting of the minds between business and IT decision makers					

19. How successful is your organisation in performing against each of these *people* alignment factors?

	Very Unsuccessful	Unsuccessful	Neutral	Successful	Very Successful
Meeting of the minds between business and IT decision makers					
Management skill & capability of business decision makers					
Management skill & capability of IT decision makers					
Communication between business and IT decision makers					
Firm wide active involvement in business and IT strategy formulation					
Involvement of business decision makers in IT strategy formulation					
Involvement of IT decision makers in business strategy formulation					
Meeting of the minds between business and IT decision makers					

20. How important are the following *process* factors in achieving the alignment between business strategy & information technology strategy within your organisation?

	Very Unimportant	Unimportant	Neutral	Important	Very Important
A process which promotes clarity & consistency					
A process that ensures IT strategy goals are linked with business goals					
A process that ensures business goals are linked to IT strategy goals					
The availability of a formal process which facilitates alignment					
Formal communication processes in place between business and IT decision makers					
A formal process that ensures business strategy has a long term (5 years +) focus					
A formal process that ensures IT strategy has a long term (5 years +) focus					

21. How successful is your organisation in performing against each of these *process* alignment factors?

	Very Unsuccessful	Unsuccessful	Neutral	Successful	Very Successful
A process which promotes clarity & consistency					
A process that ensures IT strategy goals are linked with business goals					
A process that ensures business goals are linked to IT strategy goals					
The availability of a formal process which facilitates alignment					
Formal communication processes in place between business and IT decision makers					
A formal process that ensures business strategy has a long term (5 years +) focus					
A formal process that ensures IT strategy has a long term (5 years +) focus					

22. How important are the following *organisational* factors in achieving the alignment between business strategy & information technology strategy within your organisation?

	Very Unimportant	Unimportant	Neutral	Important	Very Important
An organisational structure which facilitates alignment of business and IT decision makers					
An organisational culture which facilitates alignment between business and IT decision makers					
The view that IT is an innovative organisational tool as opposed to a cost centre					

32. How successful is your organisation in performing against each of these *organisational* alignment factors?

	Very Unsuccessful	Unsuccessful	Neutral	Successful	Very Successful
An organisational structure which facilitates alignment of business and IT decision makers					
An organisational culture which facilitates alignment between business and IT decision makers					
The view that IT is an innovative organisational tool as opposed to a cost centre					

BIOGRAPHICAL NOTES

Jovita Gartlan is a Strategy & Operations Consultant with Deloitte and a Masters of Business Systems student with Monash University. With Deloitte Jovita has worked for a wide range of high profile clients providing advisory consulting services. Her recent projects include M&A services, market entry strategy development, labour productivity review, operating model reviews, business transformation, business roadmap development, cost analysis and forecasting and detailed process reengineering. Jovita has completed a Bachelor of International Trade and a Bachelor of Business Management at Monash University and was awarded a Monash Travel Grant to study Business Mandarin in Shanghai, China. Jovita has a keen interest in Australian academic research that addresses key business issues and provides fact based evidence for the business world.

Graeme Shanks is a Professorial Fellow in the Department of Information Systems at the University of Melbourne, Australia. He has also held academic positions at Monash University and Chisholm Institute of Technology. Before becoming an academic, Graeme worked for a number of private and government organizations as a programmer, systems analysts and project leader. His teaching and research interests include information quality, conceptual modelling, identity management, implementation and impact of enterprise systems, and decision support systems. Graeme has published the results of his research in over 100 refereed journal and conference papers. He is on the editorial boards of the Journal of Data Warehousing, the Journal of Database Management, the International Journal of Data Warehousing and Mining and the Journal of Knowledge Management Research and Practice.